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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

Applicant(s): Sun, *et al.*

Docket No.: 87165/9051

Serial No.: 09/773,976

Group Art Unit:

Filing Date: January 31, 2001

Examiner: Francis P. Moonan

Confirmation No.: 6280

Title: ALFALFA HYBRIDS HAVING AT LEAST 75% HYBRIDITY

DECLARATION OF PAUL SUN UNDER 37 CFR § 1.132

Assistant Commissioner for Patents
Washington, DC 20231

Sir:

I, Paul Sun, do hereby declare and state the following:

1. I am a co-inventor of the subject matter of the above-cited application.
2. I am employed as Vice President of Research at Dairyland Seed, Clinton, WI, where I have worked since since 1981.
3. I received my Ph.D. in Plant Breeding and Genetics from the University of Wisconsin-Madison in 1969. This Declaration is accompanied by my curriculum vitae, attached as Appendix A.
4. I have reviewed the Office Action dated March 15, 2002 (hereinafter, "the Office Action") and the references cited therein.
5. Claims 1-10 of the present invention are rejected under 35 U.S.C. 112, first paragraph as not being enabled by Applicants' disclosure. The Examiner stated that claim 1 is drawn to any *Medicago sativa* or cultivated alfalfa seed derived with the synthetic variety Thor, based on Applicants' description at page 2, lines 6-10, which the Examiner characterized as "describing to one of skill in the art a plant made with a series of alfalfa plants with arbitrary names and a population of genetically segregating alfalfa plants comprising the synthetic variety Thor." Based on his assessment of what one of skill in the art would understand from the disclosure, the Examiner broadly interpreted the names DS9705Hyb, A833, B209, DS9761, and C580 as "synthetic varieties".

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6. The alfalfa seed deposited with the ATCC on December 4, 2000 and identified by Accession Number PTA-2759 was made by crossing a selected cytoplasmic male sterile alfalfa plant (A833) with a selected maintainer line (B209) by controlled pollination and selectively harvesting seed from the cytoplasmic male sterile plant to produce cytoplasmic male sterile hybrid seed (A833xB209). Plants grown from seed of A833xB209 cytoplasmic male sterile hybrid were crossed by open pollination with plants grown from seed from selected alfalfa male fertile clones which are designated Thor, DS9671 and C580. These selected clones were selected on the basis of agronomically desired properties such as: forage yield, forage quality, persistence, disease, insect and nematode resistance.

7. Applicants referred to the specific parental components ((A833xB209), Thor, DS9671, and C580) of the hybrid seed identified by Accession Number PTA-2759 as selected clones or plant lines. One of ordinary skill in the art would understand that a plant clone is a group of plants originated by vegetative propagation from a single plant, and that a plant line is a group of individuals from a common ancestry, which is narrower than a strain or variety.

8. I participated in the preparation of the patent application, and reviewed and approved the application that was filed with the United States Patent and Trademark Office on January 31, 2001. At the time the application was filed, it was my opinion that the application clearly described the method by which the seed deposited as identified by Accession Number PTA-2759 was obtained, specifically, by crossing cytoplasmic male sterile hybrid plants with select clones or plant lines, rather than with a synthetic variety.

9. I have reviewed the application in light of the Examiner's rejection of the claims on the basis of lack of enablement. As one skilled in the art, it is my opinion that the application clearly describes that the seed identified identified by Accession Number PTA-2759 was obtained by crossing cytoplasmic male sterile hybrid plants with select clones or plant lines, rather than with a synthetic variety.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements and the like so made are punishable by fine or imprisonment, or both, under Section 101 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Dated: 9/6, 2002.

Paul Sun
Paul Sun

Curriculum Vitae of Paul Sun

Education: 1957 B.S. Taiwan Agriculture College
1967: M.S. University of Wisconsin
1969: PH.D University of Wisconsin (Agronomy Dept)

Dissertation Title: Inheritance of Kernel Weight of six spring wheat crosses

Work Experience:

1969-1975: Alfalfa Breeder
Teweles Seed Company
Clinton, WI 53525

Applied the concept of general combining ability and convergence of germplasm to alfalfa breeding and developed Magnum alfalfa which made 10% genetic gain in compare check variety Vernal in 1976.

1976-1980: Soybean Breeder
Pfizer Genetics
Beaman, IA

Developed 5 commercially useful soybean varieties: CX155, CX276, CS290, CX297, CX380.

1981-2002: Research Director
Dairyland Seed Co., Inc.
Clinton, WI 53525

Work on Hybrid Alfalfa, soybeans and Hybrid Corn. In 1985, developed DSR317 soybean variety which made 5% genetic gain compared to the best mid 3 maturity soybean. DSR317 was on the market for 10 years. There are about 7 million bags of DSR317 and sister lines that were grown by farmers.

Patentee: U.S. Patent No. 4,045,912
Issue Date: September 6, 1977
Title: PRODUCTION OF ALFALFA SEEDS

U.S. Patent No. 5,724,767
Issue Date: March 10, 1998
Title: ALFALFA PRODUCTS AND METHOD FOR PRODUCING
ALFALFA PRODUCTS FOR A SEQUENTIAL SYSTEM

U.S. Patent No. 6,051,759
Issue Date: April 18, 2000
Title: ALFALFA PRODUCTS AND METHOD FOR PRODUCING
ALFALFA PRODUCTS FOR A SEQUENTIAL
HARVESTING SYSTEM

U.S. Patent No. 6,359,199
Issue Date: March 18, 2002
Title: ALFALFA PRODUCTS AND METHOD FOR PRODUCING
ALFALFA PRODUCTS FOR A SEQUENTIAL
HARVESTING SYSTEM

Advisor: 1993 Sent by the United Nations to China for corn breeding advisor.
Visited five research stations, giving 12 lectures on corn breeding.

Publications: Inheritance of Kernel weight for six spring wheat crosses: Crop Sciences, 1971.

Co author on the Chapter of Pollination Control, Mechanical and Sterility of
Agronomy NO. 29, Alfalfa and Alfalfa Improvement, Edited by A.A. Hanson,
D. K. Barnes and R.R. Hill, Jr., ASA, CSSA and SA, 1988.

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